

USAWC STRATEGY RESEARCH PROJECT

A STRATEGY FOR IMPROVING THE
NATIONAL MEDICAL AND PUBLIC HEALTH
SURGE CAPACITY

by

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ABSTRACT

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After the terrorist attacks of 11 September 2001 and the anthrax letters in October of that year, there were significant efforts to improve the national public health infrastructure. In May 2003, the Federal Government sponsored a coordinated federal, state and local exercise entitled Top Officials II (TOPOFF II). It was designed to exercise and test the coordinated public health and medical response to multiple, geographically dispersed disaster events. Significant deficiencies in the public health and medical response to catastrophes persisted.

The White House then directed the Department of Health and Human Services (DHHS) to develop a strategy for improving the nation's medical and public health surge capacity to deal with the medical consequences of a terrorist attack. This paper examines the strengths and weaknesses of current strategic efforts, suggests several additional strategies to ensure immediate and long-term improvements, and proposes a medical surge capacity network, utilizing Department of Veterans Affairs and Department of Defense assets, that can provide the nation a specialized bioterrorism capability.

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A STRATEGY FOR IMPROVING THE NATIONAL MEDICAL AND PUBLIC HEALTH SURGE CAPACITY

Ironically, despite on going fear of bioterrorism, it can be argued that key elements of our health care system today are less capable of containing a biological threat than they were before September 11, 2001.¹

—Augustine et al.

The events of September 11, 2001 and the anthrax letters the following month revealed the shocking state of the US public health system. Recalling the events in his book *When Every Moment Counts*, Senator Bill Frist writes, “The gaps we now see in our public health system are the result of twenty years of benign neglect and under investment.”² The potential magnitude of a medical and public health disaster had become disturbingly clear, yet the medical system had no excess capacity to respond. The Department of Health and Human Services has developed a strategy to improve the health surge capacity of this nation. Review and analysis of this strategy reveals room for improvements by refocusing on efforts that are necessary, feasible and maximize benefit for cost.

In May of 2003, a nationwide exercise entitled Top Officials II (TOPOFF II) was conducted that involved simultaneous terrorist attacks in 3 cities. It was designed to test the public health and medical system improvements that had been instituted since the 2001 terrorist attacks. Significant inadequacies remained.

After the recent global SARS (Severe Acute Respiratory Syndrome) outbreak, Augustine et al. concluded that, rather than increasing surge capacity, cuts in third party reimbursements and severe nursing and critical medical specialty staffing have lead to more than 100,000 fewer staffed hospital beds and almost 8000 fewer intensive care beds in the U.S. hospital system since 1990.³ Elliott agreed stating, “So far, a great deal of money has been spent on planning. Less however, has gone into ensuring adequate staff levels, bed space and the means to deliver the shots (vaccines).”⁴

Glaser et al. found that a large, advanced metropolitan medical system, such as Los Angeles, could not even handle the annual, predicted patient surge from flu outbreaks.⁵ George Benjamin, the executive director of the American Public Health Association declared, “Everyday, in the hospital emergency departments around this country, we face a smoldering mass-casualty scenario.”⁶

Because of the increased threat of terrorism on American shores and the lack of any excess medical capability, the White House directed the Department of Health and Human

Services (HHS) to develop a strategic plan for the nation to improve its public health and medical surge capacity.⁷

Since there is no recognized definition for “surge capacity” when it refers to health and medical care, the Department of Health and Human Services has proposed to use the following definition.

Health surge capacity is the ability a health care system has to rapidly expand beyond normal services to meet the increased demand for medical care and public health that would be required to care for the casualties and fatalities resulting from a large scale public health emergency disaster. Needed resources include (appropriate medical facilities and) beds, (appropriately trained) personnel to staff the beds, equipment (and supplies), ability to transport victims and personnel, and the ability to provide ongoing care.⁸

THE HISTORY OF THE SURGE CAPACITY REQUIREMENT

As Senator Frist mentioned in his book, the U.S. public health system had been ignored for decades.⁹ The political system had focused on the rising cost of health care and the increased numbers of uninsured. A referendum on nationalizing health care failed. A system of managed care relying on Health Maintenance Organizations proved not to be the solution. The nation’s health care system struggles on a daily basis to remain solvent with hospitals closing, the cost of health care rising and the number of uninsured exploding.

There was little attention being paid to the public health system. The events of the fall of 2001 revealed the potential devastating effects of this oversight.

SEPTEMBER 11, 2001

The U.S. has been battling terrorism for decades. Yet, for the average American, terrorism was merely an overseas threat. The events of September 11th 2001 brought that threat onto American shores. Instantly, every American was vulnerable to terrorism.

The mass casualty situation that the destruction of the World Trade Center created was a horrific disaster creating more casualties than the Japanese attack on Pearl Harbor. Despite its tremendous proportions, the medical disaster was a local event that the New York City metropolitan area was able to absorb. The medical surge capabilities of the nation were not threatened on a larger scale.

The following month, a letter containing anthrax was sent to Senate Majority Leader Tom Daschle’s (D-SD) office in the Hart Senate Office Building. In his book *When Every Second Counts*, Senator Bill Frist relates a phone conversation that he had with Tom Ridge, the newly appointed Secretary of the Department of Homeland Security. After learning that people outside

of the Hart Building were infected with inhalational anthrax, Senator Frist told Ridge that it was no longer a local public health situation but that “this could explode as a national security issue and national public health emergency.”¹⁰

This combination of events revealed that America was not immune to terrorism, and that America was not adequately prepared for the possible consequences. An exercise was planned and conducted to test the vulnerabilities to such an occurrence.

TOPOFF II

In May of 2003, 8,500 people from 100 federal, state and local agencies conducted an exercise known as TOPOFF II. The initial TOPOFF exercise (short for Top Officials) occurred in March of 2000 and involved simultaneous terrorist attacks in Denver, Maine and the Washington, DC area. TOPOFF II involved a simulated “dirty-bomb” (radiological, not nuclear) explosion in Seattle, a biological (plague) attack in Chicago and several other smaller disasters.¹¹ The intent was to test the emergency response of the federal, state, and local agencies to determine their success in improving disaster preparedness since the Fall of 2001. Several significant, unresolved issues remained.

WHITE HOUSE DIRECTIVE

Within a month of completion of TOPOFF II, the White House Policy Coordinating Committee (PCC) sent a tasking to several Federal agencies outlining the major Homeland Security policy issues that arose during the TOPOFF II exercise. Among them was Health Surge Capacity during a WMD event. The tasking read:

Casualties following a large scale biological attack or other terrorist attack could exceed the current combined capability of Federal, State and local hospitals and health care facilities. There is an immediate and long-term need to build a surge capacity to treat large numbers of actual or potential casualties. Particular attentions should be made to address the likelihood of large numbers of psychological casualties that may exceed the number of actual casualties in such attacks.¹²

The Department of Health and Human Services was assigned to lead a working group to research, discuss and develop strategic solutions to improve the national health surge capacity. The working group convened in late June 2003 and included representatives from the Department of Homeland Security (DHS), Department of Transportation (DOT), Department of Veterans Affairs (VA), Department of Defense (DOD), United States Postal Service (USPS), and several operating divisions within DHHS.¹³

This committee's initial report, submitted to the White House PCC in July 2003, included fourteen areas felt to be essential for improving the nation's health surge capacity. The PCC selected five of these as highest priority. The DHHS lead working group refined the recommendations and developed a work plan for each of the five priority areas. This, then, is the nation's strategy to improve health surge capacity.

ANALYSIS OF THE CURRENT DHHS STRATEGY TO IMPROVE SURGE CAPACITY

Like any political tool, strategies to improve the nation's surge capacity should follow the practical guidelines of necessity, feasibility, and cost versus benefits analysis.¹⁴ DHHS must ensure that each of its strategies will meet these guidelines. Some efforts, such as defining bed capacity, provide little benefit. Some, such as creating excess bed capacity, are cost prohibitive, and some, such as using models to predict bioattack casualty counts, are just not feasible.

The current DHHS strategy to improve the national health surge capacity consists of the following five priorities¹⁵:

- Identify ways to augment hospital bed capacity.
- Assure sufficient numbers of trained medical personnel to support a crisis.
- Ensure availability of pharmaceutical supplies.
- Evaluate and expand the National Disaster Medical System (NDMS) capabilities.
- Use models to set surge requirements.

AUGMENT HOSPITAL BED CAPACITY

The DHHS working group agreed on nine priorities in addressing the strategic issue of increasing hospital bed capacity. See Table 1.

Increasing hospital bed capacity in every hospital nationally is neither feasible nor cost effective. More and more financially strapped hospitals are actually closing beds. It is prohibitively expensive to build and maintain excess bed capacity, extra intensive care capability and isolation wards sufficient to handle a bioterrorist attack. The director of the health policy center at Columbia School of Nursing, Kristine Gebbie, points out that experts working this issue concede that having empty beds and additional supplies is not economically viable for most hospitals. "An unused bed is a very expensive luxury for a community."¹⁶

1. Define bed capacity in terms of physical beds, staffing and necessary medical equipment and supplies to care for a given patient with a given disease.
2. Create a nationwide standard for reporting bed capacity.
3. Coordinate existing Federal medical beds (DOD, VA, etc.) into (the) community during a disaster.
4. Define a process for expanding bed capacity according to population and threat.
5. Assess progress reports submitted by grantees to determine success in meeting benchmarks.
6. Develop communications plans to ensure the public understands its role and seeks health care appropriately.
7. Create public/private partnerships to develop standardized benchmarks to define appropriate levels of care during a disaster.
8. Develop, test and empirically evaluate instruments for psychological triage.
9. Enhance transportation capability through ESF 1 (Emergency Support Function 1) to support transport of personnel and patients as needed.

TABLE 1. DHHS STRATEGY TO AUGMENT HOSPITAL BED CAPACITY¹⁷

In the summer of 2003, DHHS announced that it would make another \$1.4 billion available to “upgrade the public health system and the hospitals and health care entities that will be called upon to respond to a bioterrorist event.”¹⁸ The Chief Operating Officer of a large New York City medical center expressed his frustration with this approach to addressing surge capacity. His facility received \$40,000 dollars from the federal government to develop a bioterrorism response capability yet his facility runs a daily operating deficit in the millions of dollars.¹⁹

Powers hits upon the strategic answer to bed capacity shortages in his article. “No single jurisdiction will have all of the capabilities needed to respond to a major terrorist event; this is certain given our current fiscal woes. As a consequence, however, it is essential that we have them collectively.”²⁰ The strategic focus, then, should be on gaining a situational awareness of the medical capabilities that already exist in a community, region, or state and develop methods to re-allocate these resources when needed.

Many communities and regions track their collective medical capability with databases that they have developed or adopted. Individual hospitals voluntarily report their capabilities to

the database. Any number and type of medical resource can be tracked, located and shared, as needed, during a disaster.

The Greater New York Hospital Association (GNYHA) has developed the Hospital Emergency Response Data System (HERDS). This web-based system is managed by the New York Department of Health and activated during a real or potential disaster. Local hospitals, health care facilities and nursing homes log on to the database and input their existing medical capabilities. The information provides an overall picture of the medical capabilities of the entire region. When a disaster overwhelms a facility or hospital group, GNYHA can use HERDS data to allocate resources on a voluntary basis.²¹ Recent events such as the East Coast Blackout of August 2003 and Hurricane Isabel have proven the value of HERDS. Even facilities from surrounding states are signing up to participate.²²

DHHS is working on a national medical capabilities data collection system called the Hospital Assets Reporting and Tracking System (HARTS).²³ This national system would be useful to allocate resources from a national level in support of regions and states.

The greater problem than tracking resources will be the actual movement of resources when needed. This includes moving medical capability to the disaster-affected area and moving patients out. Those logistics should be the focus of further strategic efforts by DHHS. The DOD, particularly the National Guard, has transportation assets can be part of a national network of WMD specialty capability as will be discussed later.

Therefore, the strategic answer to assuring adequate bed capacity is a combination of two major priorities: tracking the existing medical capability that can be brought to bear on the situation and then, getting it there. DHHS must continue to focus on developing comprehensive databases to track existing capability at all levels and to develop a plan to facilitate transport of resources as needed. DHHS should discontinue efforts to define and create bed capacity, as these efforts do not meet the guidelines of feasibility or cost benefit.

ASSURE SUFFICIENT NUMBERS OF TRAINED PERSONNEL

The DHHS working group agreed on eight priorities in addressing the strategic issue of projected manpower shortages. See Table 2.

1. Create a database of health care personnel that can be used to resolve interstate credentialing issues.
2. Create a database of non-medical volunteers.
3. Work with professional associations to address license and liability issues.
4. Develop a tabletop and field exercise program.
5. Develop training curriculums that address all aspects of planning for and responding to disasters including psychological factors.
6. Develop an electronic training resource.
7. Extrapolate trainee data from the Health Resources and Services Administration's (HRSA) Bioterrorism Training and Curriculum Development Program (BTCDP) and Bioterrorism Hospital Preparedness Program and the Centers for Disease Control and Prevention (CDC) bioterrorism training programs to determine training gaps by state and by discipline.
8. Train a cadre of National Health Service Corps (NHSC) Ready Responders to be placed in needy Health Professional Shortage Areas (HPSA) and other health professionals to stand ready to respond to regional or national emergencies.

TABLE 2. DHHS STRATEGY TO ADDRESS MANPOWER SHORTAGES²⁴

DHHS strategy correctly focuses on maximizing existing provider systems in order to increase the manpower pool that would be available to assist in a disaster situation. Organized emergency medical systems such as the National Disaster Medical System (NDMS),²⁵ the Metropolitan Medical Response System (MMRS),²⁶ and the Medical Reserve Corp (MRC)²⁷ should serve as the immediate source of surge medical manpower. Maximizing these existing manpower systems is more feasible and cost effective than creating an entirely new system.

During a disaster, professional liability, licensing and credentialing issues will undermine the ability to provide trained medical personnel to a facility and state where needed.²⁸ Only federalized providers have the legal flexibility and liability protection to provide care wherever the government directs them. The DHHS must increase the number of "federalized" providers in systems such as NDMS and push for legislation that would essentially provide Good Samaritan status during a disaster.

ASSURE AVAILABILITY OF PHARMACEUTICAL SUPPLIES AND MEDICAL COUNTERMEASURES

The DHHS working group agreed on seven priorities in addressing the strategic issue of drug and medical equipment availability in the event of a disaster. See Table 3.

1. Expand the pre-positioned pharmaceutical cache system.
2. Institute a national information technology system to view all drug caches and augment the Strategic National Stockpile (SNS).
3. Expand the Food and Drug Administration's (FDA) Drug Shortage Program to address possible drug shortages in a mass casualty event.
4. Create an information Sharing and Analysis Center (ISAC) for pharmaceuticals and other medical countermeasures.
5. Consider returning the SNS back to HHS control²⁹
6. Enhance transportation capability through ESF 1 (Emergency Support Function 1) to support transport of cargo and supplies as needed.
7. Implement a formal process to facilitate patient access to investigational medical countermeasures such as vaccines during a surge situation.

TABLE 3. DHHS STRATEGY FOR ASSURING AVAILABILITY OF DRUGS AND EQUIPMENT³⁰

The Strategic National Stockpile (formerly known as the National Pharmaceutical Stockpile) is the answer to assuring availability of necessary drugs and equipment in the event of a bioterrorism or chemical disaster. The Center for Disease Control (CDC) describes the SNS as a national repository of antibiotics, chemical antidotes, antitoxins, life-support medications, IV administration, airway maintenance supplies, and medical/surgical items. The SNS is designed to supplement and re-supply state and local public health agencies in the event of a national emergency anywhere and at anytime within the U.S. or its territories. "Twelve-hour Push Packages" are positioned in strategically located, secure warehouses ready for immediate deployment within 12 hours of the federal decision to deploy SNS assets.³¹

A method of further deploying the stockpile into the communities is a priority for DHHS. One solution is to further divide the stockpile and position caches at DOD and VA facilities. Community Armory, National Guard and Reserve stations could be included in this network to further decrease deployment time. By making use of existing DOD and VA warehousing

facilities, logistics and pharmacy systems, the analysis guidelines of feasibility and cost benefit are met.

In the event of a massive anthrax release, the delivery of the antibiotics from cache site to individual citizen could be problematic. Long lines at SNS distribution sites, mob scenes and even rioting are potential possibilities. A recent news release stated that a plan is being developed that would have the U.S. Postal Service deliver the antibiotics. In a speech delivered to a subcommittee of the U.S. House of Representatives on 26 February 2004, Post Master General John Potter stated the following:

The Postal Service, through its unparalleled reach and the high level of trust the nation has in its employees, recognizes that it can contribute to homeland security in other ways, as well. Last week, I met with Secretary Tommy Thompson of the Department of Health and Human Services and Secretary Tom Ridge of the Department of Homeland Security. We formally agreed to the development of a plan in which the Postal Service's letter carriers could be called upon — voluntarily — to deliver antibiotics to affected Americans in the event of a catastrophic incident involving a biological agent. Procedures under consideration would augment, not replace, those of local communities.³²

IMPROVE THE NATIONAL DISASTER MEDICAL SYSTEM (NDMS)

The DHHS working group agreed on five priorities for improving the NDMS. See Table 4.

1. Enhance NDMS response team capabilities.
2. Expand number of NDMS hospitals as needed.
3. Critically assess the Federal Coordinating Centers and the process used to collect data and realign as needed.
4. Develop a strategic transportation plan for personnel, equipment and patients.
5. Consider returning NDMS assets to DHHS from DHS.

TABLE 4. DHHS STRATEGY TO IMPROVE NDMS ³³

Improving the National Disaster Medical Response System is a strategic effort that can realize immediate benefits to national medical preparedness and surge capacity. This system can provide the national medical system with a capability similar to that provided to the DOD by the Reserves and National Guard. A well-trained and equipped NDMS can be quickly and easily deployed anywhere in the nation to assist overwhelmed medical systems and provide immediate surge capacity. Improving the capability of the NDMS system is a strategic effort that meets the criteria of necessity, feasibility and favorable cost benefit ratio.

USE MODELS TO SET SURGE REQUIREMENTS

The DHHS working group agreed on three priorities to set surge requirements using models. See Table 5.

1. Develop and distribute emergency planning templates that are scenario-based for adaptation by various communities.
2. Develop models that specify the specific surge requirements needed for each type of disaster and test these models at local, state and regional levels.
3. Develop models that identify the systems issues (i.e. breakpoints) that can cause surge system failure.

TABLE 5. DHHS STRATEGY TO SET SURGE REQUIREMENTS³⁴

In justifying “Models to set surge requirements” as a strategic priority, the HHS Working Group writes, “One of the problems in planning for surge requirements is the difficulty in knowing exactly what would be required of the healthcare system using different mass casualty scenarios. Modeling allows healthcare systems planners to estimate exactly what would be required.”³⁵

This assertion is wrong. Bioterrorism models only predict the dispersion of an agent, not the casualty loads. Accurate casualty predicting models are currently not possible for a bioterrorist incident. Likewise, developing the necessary excess medical capacity to respond to these modeling predictions is not feasible, either, as was previously discussed.

Accurate predictions depend on two things. First, the model must be an accurate reproduction of the type of disaster. Models that accurately reproduce a disaster are “modeled” after actual disasters. Proponents of modeling point to the “nuclear bomb explosion model” as the “poster child” for modeling accuracy. The effects of nuclear explosions on populations has been measured and recorded. There have been no biological terrorist attacks. The closest example is to the accidental release of anthrax from a biological weapons factory in Sverdlovsk, Russia in April 1979 where 77 people were infected down wind and 66 died.^{36, 37}

Secondly, the situation variables (weather, population exposed, etc.) must be consistent with the predicted attack situation. The bioattack model-building experts can’t agree on these input variables. There is no consistency to the model predictions save for one.

Universally, existing bioterrorism models predict the potential for astronomical casualty numbers. Numbers so hopelessly high that it is impossible for this nation to build the excess medical capacity needed to handle them. Some models predict that an aerosolized release of just 100 kg of anthrax spores could result in 3 million deaths.³⁸ Using the technologies and capabilities readily available on the market, a recent anthrax dispersion model predicted that a bioterrorist in a crop duster flying up the Hudson River from New York City could potentially expose 13 million people.⁶⁹ One thousand, 100,000, or 1 million potential casualties; it is not feasible to build enough excess capacity for any of these possibilities.

Again, the DHHS strategic effort must focus on a plan that maximizes the use of existing capabilities and encourages efforts to care for any number and severity of casualties.

NEW COMPONENTS OF A NATIONAL SURGE CAPACITY STRATEGY

The DHHS should include some additional strategies in their effort to improve the national surge capacity. They must focus on efforts that ensure that localities are fully prepared for their most likely disaster and that there is a nationwide, bottom-up dependant, tiered disaster support system. Efforts to develop a public education program and establish a National WMD Special Medical Capabilities Network will also meet the three criteria of necessity, feasibility, and favorable cost benefit analysis.

A STRONG FOUNDATION: COMMON DISASTER FOCUS, ALL-HAZARD FLEXIBILITY

An Institute of Medicine Report in 1999 found that most communities had some level of disaster response already in place. The Institute of Medicine stated, "It would be a serious tactical and strategic mistake to ignore (and possibly undermine) these mechanisms in efforts to improve the response of the medical community to additional, albeit very dangerous, toxic materials. Strengthening existing mechanisms for dealing with unintentional releases of hazardous chemicals, for monitoring food safety, and for detecting and responding to infectious disease outbreaks, is preferable to building a new system focused solely on potentially devastating but low-probability terrorist events."⁴⁰

Rather than funding localities, communities and regions to develop a bioterrorism-specific response plan, the government must encourage and ensure that all response plans are "all-hazard." The Institute of Medicine emphasized "the all-hazards approach currently advocated by emergency managers requires the availability of systems capable of responding not only to high-probability hazards but also to unexpected events."⁴¹ That is, they should be broad and flexible enough to deal with any and all disasters that may confront them, from fires to floods, snowstorms to blackouts, chemical leaks to bioterrorist attacks. Additionally, Mayo states that

the federal government should ensure that localities base their response plans on the most likely disaster scenario that could occur in their community.⁴² Coastal regions should be fully prepared to respond to hurricanes. Midwest regions should have outstanding tornado response plans. New York City has a history of power blackouts. The federal government must ensure that those health facilities have sufficient generators and plans and procedures to keep them functional.

TIERED LEVELS OF SUPPORT AND BOTTOM-UP APPROACH TO SURGE PLANNING

According to public health experts, the chaos that existed in Washington during the anthrax terrorist attack in October 2001 was emblematic of a national failure to coordinate a response to terror between federal, state and local governments.⁴³

The Institutes of Medicine agrees. "The core of emergency management is at the local or regional level and follows a bottom-up approach."⁴⁴ The federal government must encourage the development of this tiered disaster response system. It must ensure that a plan exists at every level and that each supporting plan is based on the supported plan. The GNYHA is an excellent example of a regional organization building a disaster support plan based on the local facility's disaster response plans. The states, in turn, should develop disaster support plans based on the needs of the regions.

All disasters occur locally.⁴⁵ Whether it's a three car accident, a plane crash, a regional outbreak of food poisoning, a gas attack or wide spread dissemination of anthrax in a major metropolitan area, the local health facility must respond with the necessary capability until overwhelmed. Most disasters can be handled on the local level. The World Trade Center collapse was handled in the New York City metro area. The Oklahoma Federal building casualties were cared for locally. In the event of a large-scale biological or radiological event, such as occurred in TOPOFF II, more resources will be summoned.

A ROBUST PUBLIC EDUCATION AND MARKETING CAMPAIGN

A massive public education program must be started immediately. The public has the misperception that the federal government is fully prepared to care for them should a WMD attack occur. They must be educated that it will be impossible to provide the usual standard of care for thousands or millions of severely ill patients. The public may have extrapolated the obvious changes in security at airports and other public places and the headlines about smallpox vaccine programs and the national stockpile to mean that a well-developed health and medical surge plan already exists.

An education campaign is necessary to prepare the public psychologically. Maureen McGaffin warns,

In the event of a bioterrorism attack, the harsh reality is that not all lives will be saved, the capacity of hospitals to take and treat victims may be limited and immediate decisions about quarantine and deployment of resources would be necessary. Just as in a war zone, victims of an attack would have to be triaged so those with the highest possibility of survival would be treated first.⁴⁶

A bioterrorist attack with a communicable disease such as plague or smallpox will raise significant legal and ethical issues that the public needs to be prepared to accept. The recent appearance and spread of Severe Acute Respiratory Syndrome (SARS) raised issues of personal privacy and freedom versus the duty to protect the health of the society. Similarly, issues such as patient surveillance, quarantine and travel restrictions will affect everyone after a bioterrorist attack.⁴⁷ When the SARS epidemic hit Toronto, health workers who had come in contact with the disease were restricted to their homes or the hospital. Patients with the disease were ordered to stay in their homes for up to ten days. Food had to be delivered to them.⁴⁸ The American public is not yet psychologically prepared for this eventuality.

The public education campaign must educate the public on how to respond in the case of a terrorist attack much like the “duck and cover” campaign of the Cold War era. Even a small WMD attack could result in thousands or millions of worried well flooding health care facilities to get “checked out” or seeking prophylactic medication, further stressing the healthcare system. After the sarin gas attack in the Tokyo subway on 20 March, 1995, 5510 people sought medical care, flooding emergency rooms that were already overwhelmed with the 100 or so true casualties (12 died).⁴⁹

Varney discusses how “inadequate public education leads to the psychological impact causing people to believe that a radiologic dispersal device (RDD) is a nuclear bomb with resultant widespread radiation sickness, lethal injuries, nuclear fallout and contaminated land.”⁵⁰ An example of how misconceptions can cause mass panic occurred in Goiania, Brazil in 1987 when two men brought home some glowing, blue pieces of metal they had taken out of a discarded Cesium-137 radiotherapy machine. These “magical stones” were distributed amongst friends and family as far as 100 miles away. When the event hit the newspapers two weeks later, over 112,000 people, greater than 10% of the population, presented to the medical system for monitoring and evaluation. Of that, only 250 had actually been contaminated, 28 were hospitalized and 4 died.⁵¹

There have been some token federal efforts toward public education. DHS has partnered with the Advertising Council and the Alfred P. Sloan Foundation to launch the Listo Campaign,

targeted at increasing public awareness of Spanish-speaking Americans on how to prepare for and respond to potential terrorist attacks.⁵² Senator Frist's book, *When Every Second Counts: What You Need to Know About Bioterrorism, From the Senate's Only Doctor*, is written specifically to educate the public on bioterrorism preparedness and response.⁵³

A good public education campaign could contribute greatly to maintaining order during the next terrorist attack, but as Anne Applebaum laments, bioterrorism is a political hot potato. "Most people who talk about the need to spend more money on homeland security are talking about funds for firefighters or ports. Most of the people who worry about terrorism are talking about airplanes or nukes." She feels that because bioterrorism is a subject that the public has little knowledge of, the politicians are ignoring it. The fact that it is not part of "regularly scheduled programming" goes to show how far we are as a nation, from dealing with this psychologically.⁵⁴

A NATIONAL NETWORK OF SPECIALIZED WMD MEDICAL RESPONSE CAPABILITY

The federal government's highest priority must be on ensuring that the nation is fully prepared to respond to the most likely disasters. After that, a national network, specializing in providing care for casualties of terrorist attacks, should be developed. As mentioned earlier, the federal government's current approach is aimed at encouraging all hospitals to develop surge capacity for biological terrorism (even though most hospitals remain inadequately prepared even for their more likely disasters).

The VA and DOD as a national terrorism response capability

Instead of encouraging civilian facilities to develop their own specialized bioterrorism response capability, the federal government should develop its own specialized capability. The VA and the DOD health care systems can provide an excellent nationwide network of medical surge capability specialized for WMD response.

The Department of Veterans Affairs (VA) is the largest integrated health care system in the country, with 162 hospitals and over 800 clinics nationwide. A VA facility is accessible to nearly every community in the U.S. The VA's missions include healthcare for the veteran, teaching, research, and comprehensive emergency management. VA's Emergency Management Strategic Healthcare Group coordinates this "fourth mission" through a national network of Area Emergency Managers who in turn, coordinate medical back up to the Department of Defense and assist the public via the National Disaster Medical System and the Federal Response Plan.⁵⁵ Many VA campuses have large medical facilities and surplus buildings. These facilities could be converted into isolation wards for plague or smallpox

patients and into intensive care facilities for botulism victims needing long-term ventilator support. Surplus specialized medical facilities could even be “mothballed” and maintained ready for use if a bioterrorist event occurred. Bioterrorism casualties could be selectively cared for in designated VA Bioterrorism Specialty Care facilities while the usual VA inpatients could be sent to the civilian hospitals.

The VA staff medical providers can be federalized for deployment and can be selectively trained to care for bioterrorist victims.

The VA medical system has a well-established, nationwide logistics system. This capability makes the VA a logical choice for further distributing the Strategic National Stockpile. By establishing cache sites on VA campuses across the nation, the federal government can have pharmaceuticals well disbursed yet retain full control over distribution and maintenance of the stockpile.

Lastly, the VA, and particularly the DOD systems, has significant transportation assets and the capability to transport supplies, equipment, personnel and even ill patients. There is a debate in government disaster planning groups whether it is better to transfer patients out of overrun facilities or to transfer healthcare providers in. Likely, both scenarios will occur to some degree depending on the situation. Either way, VA and DOD transportation assets will be needed in great numbers.

The VA healthcare system is the logical choice as the nation’s specialized bioterrorism medical response capability. It is nationwide, has an emergency management mission, a federalized staff, a well-developed logistics and pharmaceutical systems and is run by the federal government. Much the same can be said for the DOD medical system. The DOD has the disadvantage in that it will likely be fully occupied with combat missions in the event of a terrorist attack.

CONCLUSION

The events of September 11 have made it clear that the US is not immune to terrorist attacks on home soil. The anthrax letters and exercises such as TOPOFF II have exposed inadequacies in the nation’s public health and medical capability to respond to WMD terrorist attacks. The Department of Health and Human Services has begun to develop a strategy to improve the nation’s surge capacity.

This analysis describes the efforts that DHHS is currently pursuing and examines some of the strengths and shortcomings of the current strategy. Efforts to define and increase bed capacity are not feasible. Surge capacity must come from existing resources and efforts must

be made to track and re-allocate resources as needed. Examples of successful resource tracking databases were discussed. Provider and pharmaceutical availability can be assured by improving existing systems such as the National Disaster Medical System and the Strategic National Stockpile. Modeling efforts to predict casualty numbers should be discontinued and efforts should be focused on preparing to care for any number of casualties with the resources available.

Additional strategic priorities were introduced. Before concentrating national efforts on specific responses to terrorism, the federal government must ensure that more likely disasters can be adequately managed. The focus should be on maximizing existing plans, supporting lower level plans with a bottom-up approach, and ensuring a tiered response that is well integrated. A network of medical surge capability specialized for WMD response using the VA and DOD medical systems was proposed. Finally, the importance of a massive public education program was discussed.

As Senator Frist proclaims in his book, "We know the challenges. They were not completely unknown before the anthrax attacks of 2001, but they were not nearly so clearly defined. We now call upon the best in the American spirit that exists in communities all across this great land. With recognition that we have under invested in our public health system we now call for improvement."⁵⁶

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ENDNOTES

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² Senator Bill Frist, M.D., *When Every Moment Counts: What You Need to Know About Bioterrorism from the Senate's Only Doctor* (Lanham, MD: Rowman & Littlefield Publishers, Inc., 2002), 159.

³ Augustine, 24.

⁴ Victoria Stagg Elliott, "Public Health's Main Fear Over Bioterrorism: Surge Capacity," *AMNews* (24 February 2003): 2.

⁵ Carol A. Glaser et al., "Medical Care Capacity for Influenza Outbreaks, Los Angeles," *Emerging Infectious Diseases* June 2002 [journal on-line]; available from <<http://www.cdc.gov/ncidod/eid/vol8no6/01-0370.htm>>; Internet; accessed 26 August 2003.

⁶ Elliott, 3.

⁷ Ann Knebel, CAPT, U.S. Public Health Service, surge capacity action officer for the Office of the Assistant Secretary for Public Health and Emergency Preparedness, interview by author, 18 August 2003.

⁸ Office of Public Health Emergency Preparedness, Department of Health and Human Services, "Preliminary Recommendations to the Policy Coordinating Committee on Health Surge Capacity," Washington, D.C., 15 August 2003, 1. The words with in parentheses were added by the author to improve clarity.

⁹ Frist, 159.

¹⁰ Frist, 15.

¹¹ Patrick O'Connor, "Mixed Results from TOPOFF II: Homeland Undersecretary Brown," *The Hill*, 4 June 2003, 1-3.

¹² Robert P. Kadlec <Robert_Kadlec@who.eop.gov>, "Biodefense End-to End Assessment Summary of Prioritized Key Recommendations," electronic mail message to Jeffrey Short <Jeffrey.Short@hhs.gov>, 22 October 2003.

¹³ Office of Public Health Emergency Preparedness, Department of Health and Human Services, "Preliminary Recommendations to the Policy Coordinating Committee on Health Surge Capacity," Washington, D.C., 15 August 2003, 1.

¹⁴ Carolyn Pumphrey and Antulio Echevarria II, "Strategic Deception in Modern Democracies: Ethical, Legal, and Policy Challenges," conference briefing transcript, Strategic Studies Institute, U. S. Army War College, 3.

¹⁵ Office of Public Health Emergency Preparedness, 2.

¹⁶ Elliott, 3.

¹⁷ Ibid., 2.

¹⁸ E. M. News, *International Association of Emergency Managers Bulletin* 21 (October 2003): 9

¹⁹ Bruce J. Flanz, Executive Vice President and Chief Operating Officer of the Brookdale University Hospital and Medical Center, interview by author, Manhattan, NY, 5 September 2003.

²⁰ John Powers, "Project Prepared: 18 Counties and 3 States Work Together to Make Delaware Valley Safer and More Resilient," *International Association of Emergency Managers Bulletin* 21 (October 2003): 10

²¹ Susan Stuard, GNYHA HERDS specialist, personal interview by author, Manhattan, NY, 8 October 2003.

²² Ibid.

²³ Dean Ross, director of the Secretary's Command Center at DHHS, interview by author, 15 October 2003, Washington D.C.

²⁴ Office of Public Health Emergency Preparedness, 4.

²⁵ Matthew J. Levy, Jason N. Paluck, and Richard A. Bissell, "An Overview of the NDMS Online Response Team Training Program," *Newsletter from the American College of Emergency Physicians' Section of Disaster Medicine* 12 (July 2003): 4.

²⁶ Institute of Medicine, *Preparing for Terrorism: Tools for Evaluating the Metropolitan Medical Response System* (Washington, DC: National Academy Press, 2002), 5.

²⁷ Ehren Ngo, "Utilizing Volunteers to Improve Disaster Medical Response Capabilities: A Look at the Medical Reserve Corps," *Newsletter from the American College of Emergency Physicians' Section of Disaster Medicine* 12 (July 2003): 11.

²⁸ Andrew I. Bern, "Transitions," *Newsletter from the American College of Emergency Physicians' Section of Disaster Medicine* 12 (July 2003): 6.

²⁹ When DHS was stood up, it assumed control of the SNS from HHS. Currently the stockpile is owned, operated, maintained, stored and deployed each by a different government agency.

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³² Postmaster General/CEO John E. Potter, Statement before the Subcommittee on Transportation, Treasury and Independent Agencies Committee on Appropriations, U. S. House of Representatives, 26 February, 2004

³³ Office of Public Health Emergency Preparedness, 5.

³⁴ Ibid.

³⁵ Ibid.

³⁶ Frist, 57.

³⁷ Lester C. Caudle, "The Biological Warfare Threat," in *Medical Aspects of Chemical and Biological Warfare* (Washington, DC: the Office of the Surgeon General, 1997), 452-453.

³⁸ Amy Kaji, "Overview of Bioterrorism," *Newsletter from the American College of Emergency Physicians' Section of Disaster Medicine* 13 (January 2004): 9.

³⁹ This model was presented to the White House Homeland Security Council, Washington D.C. 9 October 2003.

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⁴¹ Institute of Medicine, *Preparing for Terrorism: Tools for Evaluating the Metropolitan Medical Response System*, 6.

⁴² Mayo, 11.

⁴³ Joby Warrick and Steve Fainaru, "Bioterrorism Preparations Lacking at Lowest Levels: Despite Warnings and Funds, Local Defenses Come Up Short," *Washington Post*, 22 October 2001, sec. A, p. 07.

⁴⁴ Institute of Medicine, *Preparing for Terrorism: Tools for Evaluating the Metropolitan Medical Response System*, 6.

⁴⁵ Mayo, 11.

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⁴⁸ Michelle Orris, "Hospitals Unprepared for a SARS Emergency," *MEDLINEplus Health Information* 30 July 2003; [journal on-line]; available from <http://www.nlm.nih.gov/medlineplus/news/fullstory_13524.html>; Internet; accessed on 25 August 2003.

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⁵⁴ Anne Applebaum, "The Next Plague," *The Washington Post*, 18 February 2004, sec. A, p. 19.

⁵⁵ Connie Boatright, J. Rex Oxner, and Kristi L. Koenig, "Hurricane Isabel- Actions by the Department of Veterans Affairs," A Newsletter from the American College of Emergency Physicians' Section of Disaster Medicine 13 (January 2004): 2.

⁵⁶ Frist, 170-171.

GLOSSARY

CDC	Centers for Disease Control and Prevention
EMS	emergency medical services
DHHS	Department of Health and Human Services
DHS	Department of Homeland Security
DOD	Department of Defense
GNVHA	Greater New York Hospital Association
HHS	Department of Health and Human Services
JCAHO	Joint Commission for Accreditation of Healthcare Organizations
MMRS	Metropolitan Medical Response System
NDMS	National Disaster Medical System
PCC	Policy Coordinating Committee
RDD	radiologic dispersal device
SARS	Severe Acute Respiratory Syndrome
SNS	Strategic National Stockpile
VA	Department of Veterans Affairs
WMD	weapon of mass destruction

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